

Jennifer Elizabeth Gerbi

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Vita: U. S. Citizen

Goal: Academic/Research position establishing a comprehensive thin film vapor deposition program, including MPECVD and ALD of electronic materials. Condensed matter physics, materials science, and inter-disciplinary instruction both at the undergraduate and graduate levels.

Education:

Ph.D. (Materials Science) University of Illinois, Urbana-Champaign, Illinois. May 2001
M.S. (Physics) University of Virginia, Charlottesville, Virginia. August 1995
B.A. (Physics) Bard College, Annandale-on-Hudson, New York. May 1993

Research Experience:

Postdoctoral Research Associate

June 2001-Present

Argonne National Laboratory, Argonne, Illinois.

Supervisors: Dr. John Carlisle, Dr. Orlando Auciello, Dr. Mike Pellin

Development of Ultra-Nanocrystalline Diamond (UNCD) microwave CVD thin film growth processes, study of electronic and structural film properties, and MEMS devices. Development of UNCD in-situ gas doping process and unique substrate seeding methods. Achieved the first n-type devices realized with any diamond films. Characterization methods: Raman scattering, FTIR, ellipsometry and other optical techniques, XTEM, near-edge x-ray fine structure (NEXAFS) spectroscopy, AFM, XRD. Active collaborations include Frederick Seitz Materials Research Laboratory (UIUC), Dr. Robert Hamers and Dr. Robert Carpick (U Wisconsin-Madison), Dr. Millicent Firestone and Dr. Peter Zapol (ANL), Dr. Bruce Alphenaar (U of Louisville), Dr. Michael Dugger (Sandia), Dr. Richard Jackman (UC London), INTEL, Motorola, Second Sight, Delphi, IPAs.

2003 R&D 100 Award ANL group in collaboration with iPlas Innovative Plasma Systems GmbH

2003 DCG LDRD proposal: "Novel Thin-Film Diamond Electronics" (J.E. Gerbi, P.I.) (equiv = \$285K)

Patents under review:

"Improved Seeding Technique for Thin-Film Diamond Nucleation", J. E. Gerbi, (2003)
"All-Diamond UNCD Field Effect Transistor", J. E. Gerbi, (2003)

Graduate Fellow and Research Assistant

August 1995-May 2001

University of Illinois at Urbana-Champaign, Urbana, Illinois. Dr. John R. Abelson.

Study of reactive magnetron sputtered high-quality thin film silicon deposited at low temperatures. Focus: Control of morphology and structure via controlled particle bombardment during deposition, including both neutral and ionized species. Low-temperature direct polycrystalline Si deposition was achieved directly on glass. Special interests in medium range order of amorphous silicon as measured with novel microscopy techniques (fluctuation electron microscopy), and the grain structure of microcrystalline and polycrystalline silicon.

Collaborations with Dr. Murray Gibson (ANL), Dr. Paul Voyles (U Wisconsin-Madison), Dr. Mike Treacy (NEC), and Dr. Brent Heuser (UIUC).

Additional Responsibilities: Computer administrator. Lab Supervisor. Occasional guest lectures (1996, 1997). Training of new students. Assistance with proposals and represented advisor at NREL contractors meeting. Co-Taught Advanced Thin Films Course “MatSE 464” (2001).

Research Assistant

1994-1995 University of Virginia, Charlottesville, VA. Dr. Ken Nelson.
Conducted at the Fermi National Accelerator Laboratory, Batavia, IL
Topic: Wire Chamber Detectors for Fermilab E871: CP Violation through Hyperon Decay.
1993-1994 University of Virginia, Charlottesville, VA. Dr. Richard Sealock.
Topic: Compilation of delta-production data in various nuclei.

SERS (Science and Engineering Research Semester) participant

1993 Argonne National Laboratory, Argonne, IL. Dr. Roy Holt.
Topic: The Optically Pumped Spin Polarized D₂ Gas Target: Measurement of Nuclear Polarization.

REU (Research Experience for Undergraduates) participant

1992 College of William and Mary, Williamsburg, VA. Dr. Stan Majewski.
Research performed at CEBAF (at the Jefferson Laboratory), Newport News, VA
Topic: Development of resistive Kapton straw wire tube drift particle detector with external strip electrode readout.

Teaching Experience:

2001 UIUC: MatSe 464, Materials Science of Thin Film Growth From the Vapor Phase
(co-instructor with J. R. Abelson) (Graduate Materials Science)
1991-1992 U. Virginia: Grader, Mechanics and Electricity and Magnetism (Undergraduate Physics)
1989-1991 U. Virginia: Teaching Assistant, Physics Laboratory for Engineers (Undergraduate Physics)

Honors/Societies:

2003 Electronic Materials and Processing Division (EMPD) Postdoctoral Award (AVS)
2003 B. A. Scott Prize Best Student Poster (Gordon Conference on Chem. of Elect. Materials)
2002 Electronic Materials and Processing Division (EMPD) Postdoctoral Award (AVS)
2000 Racheff Award for Outstanding Graduate Research (Dept. of Materials Science, UIUC)
2000 Nellie Yeoh Whetten Award (AVS)
2000 Graduate Student Award (MRS)
1998-1999 Frederic T. & Edith F. Mavis Memorial Fellowship (UIUC)
1995-2000 SURGE Fellow (UIUC)
1993-1995 Consistently highest student ratings for class sections (University of Virginia)
1989-1992 EEC Fellow, Helena Rubenstein Fellow, Gustave Aufricht Memorial Scholarship,
Hudson River Area Scholarship, Honor List (Bard College)
1998-present AVS/APS member, MRS member

Activities:

2003 Invited speaker at “Futures Unlimited” conference for high school girls in science
2002, 2003 Women in Science Day at Argonne Participant
2001 Illinois Junior Academy of Science regional science fair judge
2000 Accepted to SEESP conference at UIUC
1996-2001 Member of UIUC Graduate Chorale
1997 MRS student chapter web page designer/departmental representative
1996-1997 Co-organizer for graduate student recruiting at UIUC
1993 Co-organizer for Women in Science Day at Argonne (>350 local high school students attending)

Publication List: J. E. Gerbi

J. E. Gerbi, J. Birrell, M. Sardela, J. A. Carlisle, "Control of Macrotexture in Ultrananocrystalline Diamond Thin Films", pending review, (2004)

J. E. Gerbi, O. Auciello, J. Birrell, D. M. Gruen, J. A. Carlisle, "Behavior of Metal Contacts on Ultrananocrystalline Diamond", *Appl. Phys. Lett.* **83**, 2001 (2003)

Also included in: the Virtual Journal of Nanoscale Science & Technology, Sept. 15, 2003

J. E. Gerbi, P.M. Voyles, M. M. J. Treacy, J. M. Gibson, and J. R. Abelson, "Medium Range Order in Amorphous Silicon Films as a Function of Low-Energy Particle Bombardment During Growth", *Appl. Phys. Lett.* **82**, 3665 (2003)

J. E. Gerbi and J.R. Abelson, "Microcrystalline Silicon Deposited by Direct Current Reactive Magnetron Sputtering", *J. Appl. Phys.* **89**, 1463 (2001)

J.E. Gerbi and J.R. Abelson, "Role Of Structure In The Staebler-Wronski Effect: Control Of Medium Range Order In Amorphous Si Via Ion Bombardment", Photovoltaics for the 21st Century, V. K. Kapur, R. D. McConnell, D. Carlson, G. P. Caesar, A. Rohatgi, J. Smith, eds. ECS Spring 2001 Conf. Proc., Washington, DC, 379 (2001)

J.E. Gerbi, P.M. Voyles, M. M. J. Treacy, J. M. Gibson, W. Chen, B. J. Heuser, J. R. Abelson, "Control of Medium Range Order in Amorphous Silicon via Ion and Neutral Bombardment" MRS Proc. **664**, A 27.3.1 (2001)

J.E. Gerbi and J.R. Abelson, "Microstructural Control Of Thin Film Si Using Low Energy, High Flux Ions in Reactive Magnetron Sputter Deposition" MRS Proc. **609**, A 5.3.1 (2000)

J. E. Gerbi and J.R. Abelson, "Enhanced Crystallinity of Microcrystalline Silicon using Deuterium in Low Temperature Reactive Magnetron Sputter Deposition" MRS Proc. **507**, 429 (1998)

O. Auciello, J. Birrell, J. A. Carlisle, J. E. Gerbi, X. Xiao, B. Peng, H. D. Espinosa, "Materials Science and Fabrication Processes for a New MEMS Technology based on Ultrananocrystalline Diamond Thin Films", *J. of Phys: Condensed Matter*, **16**, R539 (2004)

J. Birrell, J. E. Gerbi, O. Auciello, J. M. Gibson, D. M. Gruen, J. Johnson, J. A. Carlisle "Interpretation of the Raman Spectra of Ultrananocrystalline Diamond", in press, *Diamond and Relat. Mats.*, (2004)

O. A. Williams, S. Curat, J. E. Gerbi, D. M. Gruen, and R. B. Jackman "n-Type Conductivity in Ultrananocrystalline Diamond Films", pending review, (2004)

X. Xiao, O. Auciello, J. Birrell, J. E. Gerbi, and J. A. Carlisle, "Temperature Dependence of Ultrananocrystalline Diamond Film Growth Using Ar/CH₄ Microwave Plasma Enhanced Chemical Vapor Deposition", pending review, (2004)

J. Birrell, J. E. Gerbi, J. A. Carlisle , O. Auciello, D. M. Gruen, and J. M. Gibson, "Bonding Structure in Nitrogen Doped Ultrananocrystalline Diamond", *Journ. Appl. Phys.*, **93**, 5606 (2003)

W. S. Yang, O. Auciello, J. E. Butler, W. Cai, J. A. Carlisle, J. E. Gerbi, D. M. Gruen, J. N. Russell, Jr., L. M. Smith, R. J. Hamers "Direct Electrical Detection Of DNA Hybridization On DNA-Modified Nanocrystalline Diamond Thin Films", in press, ECS proceedings, (2003)

N. M. Haralampus Grynaviski, O. Auciello, J. A. Carlisle, J. E. Gerbi, D. M Gruen, J. F. Moore, A. Zinovev, M. A. Firestone, "Ultrananocrystalline Diamond-Biomolecular Composites: Towards BioMEMS", MRS Proc. **773**, N11.4.1 (2003)

W. Yang, O. Auciello, J. E. Butler, W. Cai, J. A. Carlisle, J. E. Gerbi, D. M. Gruen, T. Knickerbocker, T. L. Lasseter, J. N. Russell, Jr., L. M. Smith, R. J. Hamers "Preparation and Electrochemical Characterization of DNA-modified Nanocrystalline Diamond Films", MRS Proc. **737**, F4-4-1 (2003)

H. D. Espinosa, B. Peng, K.H. Kim, B.C. Prorok, N. Moldovan, X.C. Xiao, J.E. Gerbi, J. Birrell, O. Auciello, J.A. Carlisle, D.M. Gruen, and D.C. Mancini "Mechanical Properties of Ultrananocrystalline Diamond Thin Films for MEMS Applications", MRS Proc. **741**, J9-2 (2003)

W. S. Yang, O. Auciello, J. E. Butler, W. Cai, J. A. Carlisle, J. E. Gerbi, D. M. Gruen, T. Knickerbocker, T. L. Lasseter, J. N. Russell, L. M. Smith, R. J. Hamers, "Covalently-bonded adducts of biomolecules with diamond thin films: Synthesis, biochemical properties, and bioelectronic characterization", ACS proceedings, **225**, 34 Part 1 (2003)

W. Yang, O. Auciello, J. E. Butler, W. Cai, J. A. Carlisle, J. E. Gerbi, D. M. Gruen, T. Knickerbocker, T. L. Lasseter, J. N. Russell, Jr., L. M. Smith, R. J. Hamers "DNA-Modified Nanocrystalline Diamond Thin Films as High-Stability, High-Selectivity Biologically Active Substrates", Nature Materials **1**, 253 (2002)

P.M. Voyles, J.E. Gerbi, M.M.J. Treacy, J.M. Gibson, and J.R. Abelson, "Increased Medium-Range Order in Amorphous Silicon with Increased Substrate Temperature", Journ. Non-Cryst. Solids **293**, 45 (2001)

P.M. Voyles, J.E. Gerbi, M.M.J. Treacy, J.M. Gibson, and J.R. Abelson, "Absence of an Abrupt Phase Change From Polycrystalline to Amorphous in Silicon With Deposition Temperature", Phys. Rev. Letts. **86**, 5514 (2001)

S. Majewski, J. Gerbi, B. Kross, A. Weisenberger, K. Baker, "Second Coordinate Readout in Resistive Straw Drift Tubes", Nuclear Instruments & Methods in Physics Research **A 348**, 2 (1994)

In Preparation:

J. E. Gerbi and J.R. Abelson, "Enhancement of Crystallinity Using Light Particle Bombardment of Silicon Thin Films During Reactive Magnetron Sputter Deposition", in prep., (2004)

J. E. Gerbi, "Selective Seeding of Ultrananocrystalline Diamond", in prep., (2004)

J. E. Gerbi, R. Divan, J. W. Elam, O. Auciello, D. C. Mancini, J. A. Carlisle, "Thin-Film N-type Diamond Metal-Insulator Field Effect Transistor", in prep., (2004)

J. E. Gerbi, J. A. Carlisle, "All-UNCD thin film transistor", in prep., (2004)

A. V. Sumant, D. S. Grierson, J. E. Gerbi, J. Birrell, U. D. Lanke, O. Auciello, J. A. Carlisle, and R. W. Carpick, "Chemical Optimization of Ultrananocrystalline Diamond Surfaces for Control at the Tribological Interface", in prep., (2004)

Contributed Presentations

Invited Presentations:

2004 *Invited Speaker* – Fall AVS Meeting, Nov. 15-19, Anaheim, CA. J. E. Gerbi, "Thin-Film Diamond Electronics: Progress and Expectations"

2004 *Invited Speaker* – ICCE-11 Meeting, Aug. 8-14, Hilton Head, SC. J. E. Gerbi, "Ultrananocrystalline Diamond: Film Structure Control And Applications"

2004 *Invited Colloquium* – University of Michigan, Materials Science Department

2004 *Featured Presentation* – Notre Dame University, Electrical Engineering Department

2004 *Invited Colloquium* – Lehigh University, Physics Department

2004 *Invited Colloquium* – University of Maryland, Applied Physics Department

2004 *Invited Colloquium* – Drexel University, Materials Science Department

2004 *Invited Colloquium* – University of Western Ontario, Physics Department

2004 *Invited Colloquium* – University of Cincinnati, Physics Department

2003 *Invited Speaker* – American Chemical Society (ACS) Great Lakes Regional Meeting

2002 *Invited Speaker* – Argonne Division of Materials Science Postdoctoral Lecture (ANL)

Future:

2004 Fall AVS Meeting, Nov. 15-19, Anaheim, CA. *Invited Speaker* (AVS-EM3)

2004 ASME/STLE International Joint Tribology Conference, October 24-27, Long Beach, CA.

A. V. Sumant, D. S. Grierson, J. E. Gerbi, J. Birrell, J. A. Carlisle, O. Auciello, R. W. Carpick, "Nanotribological Properties of Ultrananocrystalline Diamond: the Art of Engineering the Surfaces at the Tribological Interface"

2004 SES Technical Meeting, Oct. 10, Lincoln, NB. D. S. Grierson, A.V. Sumant, J. E. Gerbi, J. Birrell, J. A. Carlisle, O. Auciello, K. Sridharan, R. W. Carpick, "Nanotribological Properties of Advanced Nanostructured Carbon Films"

2004 Diamond 15th International Conference, Sept. 12-17, Riva Del Garda, Italy. J. A. Carlisle, O. Auciello, J. Birrell, J. E. Gerbi, J. Elam, J. Wang, X. Xiao "Growth Of Nanocarbons In Hydrogen-Poor Plasmas"

2004 Diamond 15th International Conference, Sept. 12-17, Riva Del Garda, Italy. H. Ye, O. A. Williams, J. E. Gerbi, D. Gruen, R. B. Jackman, "Electronic Properties of UNCD: Impedance Spectroscopic Measurements"

2004 DOE Nanosummit, June 23-24, Washington, D. C. J. E. Gerbi, J. Birrell, J.W. Elam, J. Wang, X. Xiao, O. Auciello, D. M. Gruen, J.A. Carlisle, "Nanocarbon Materials for Energy and Bio Applications"

Past:

- 2004 AVS Prairie Meeting**, June 14, Urbana, IL. J. E. Gerbi, J. Birrell, M. Sardela, J. A. Carlisle, "Macrotecture and Growth Chemistry in Ultrananocrystalline Diamond Thin Films"
- 2004 MRS Spring Meeting**, April 12-16, San Francisco, CA. J. E. Gerbi, J. Birrell, J. W. Elam, W. Fan, J. Wang, X. Xiao, O. Auciello, J. A. Carlisle, "Ultrananocrystalline Diamond as a Platform Material for Biosensor/MEMS Technologies"
- 2004 9th ICNSDT (Intl. Conf. of new Diamond Science and Tech)**, Mar. 26-29, Tokyo, Japan. W. Fan, J. Birrell, X. Xiao, J. Gerbi, J. Elam, M.J. Pellin, J.A. Carlisle, O. Auciello, "Materials Integration Strategies For a New MEMS/NEMS and Microelectronic Technology Based on Integrated Ultrananocrystalline Diamond and Complex Oxide Films"
- 2004 APS March Meeting**, March 22-26, Montreal, Quebec. R. W. Carpick, A. V. Sumant, D. S. Grierson, J. E. Gerbi, J. Birrell, O. Auciello, J. A. Carlisle, "Ultrananocrystalline Diamond: Controlling Nanotribology via Surface Atomic Design"
- 2003 MRS Fall Meeting**, Dec. 1-5, Boston, MA. J. E. Gerbi, J. Birrell, J. Wang, X. Xiao, J. A. Carlisle, O. Auciello, "Materials Integration for an Ultrananocrystalline Diamond-Based MEMS Technology"
- 2003 MRS Fall Meeting**, Dec. 1-5, Boston, MA. J. E. Gerbi, O. A. Williams, J. E. Baker, J. Birrell, S. Curat, H. Ye, O. Auciello, D. M. Gruen, R. B. Jackman, and J. A. Carlisle, "Nanoscale Structure and Electronic Characteristics of Highly Conductive N-type Ultrananocrystalline Diamond"
- 2003 MRS Fall Meeting**, Dec. 1-5, Boston, MA. X. Xiao, J. Birrell, J. E. Gerbi, J. Wang, D. M. Gruen, O. Auciello, and J. A. Carlisle, "Growth Temperature Dependence of Ultrananocrystalline Diamond Films"
- 2003 MRS Fall Meeting**, Dec. 1-5, Boston, MA. J. Wang, X. Xiao, J. E. Gerbi, J. Birrell, O. Auciello, M. A. Firestone, and J. A. Carlisle "Electrochemically-Assisted Covalent Modification of Ultrananocrystalline Diamond Films for Biosensor Applications"
- 2003 MRS Fall Meeting**, Dec. 1-5, Boston, MA. A. V. Sumant, D. S. Grierson, J. E. Gerbi, J. Birrell, O. Auciello, J. A. Carlisle, and R. W. Carpick, "Engineering and Characterization of the Surface Properties of Ultrananocrystalline Diamond Thin Films"
- 2003 MRS Fall Meeting**, Dec. 1-5, Boston, MA. D. S. Grierson, A. V. Sumant, J. E. Gerbi, J. Birrell, O. Auciello, J. A. Carlisle, and R. W. Carpick, "The Nanotribology of Ultrananocrystalline Diamond: An Ideal Candidate for MEMS/NEMS?"
- 2003 AVS Fall Meeting**, Nov. 2-7, Baltimore, MD. J.E. Gerbi, O. Auciello, J. Birrell, S. Curat, D. M. Gruen, R. B. Jackman, O. A. Williams, J. A. Carlisle, "Highly Conductive N-type Ultrananocrystalline Diamond: Materials Properties and Devices"
- 2003 AVS Fall Meeting**, Nov. 2-7, Baltimore, MD. D. S. Grierson, A. V. Sumant, J. E. Gerbi, J. A. Carlisle, O. Auciello, R. W. Carpick, "Nanotribological Properties of Ultrananocrystalline Diamond"
- 2003 AVS Fall Meeting**, Nov. 2-7, Baltimore, MD. A. V. Sumant, D. S. Grierson, J. E. Gerbi, J. A. Carlisle, O. Auciello, R. W. Carpick, "Engineering the Surface Properties of Ultrananocrystalline Diamond for High-Performance MEMS Devices"
- 2003 AVS Fall Meeting**, Nov. 2-7, Baltimore, MD. J. Birrell, O. Auciello, J.E. Gerbi, D.M. Gruen, J. Johnson, X. Xiao, J.A. Carlisle, "Raman Spectroscopy of Ultrananocrystalline Diamond Thin Films"
- 2003 Diamond 14th European Conf.** Sept 7-12, Salzburg, Austria. O. A. Williams, S. Curat, J. E. Gerbi, D. M. Gruen, R. B. Jackman, "N-type Conduction Within Ultrananocrystalline Diamond Films"
- 2003 Gordon Conference- Chemistry of Electronic Materials**, July 13-18, Storrs, CT. J. E. Gerbi, O. Auciello, J. Birrell, J. W. Elam, D. M. Gruen, J. Wang, X. Xiao, J. A. Carlisle, "Ultrananocrystalline Diamond (UNCD) in Nanotechnology"
- 2003 AVS 25th Symp. Applied Surface Science**, Jun. 3-6, Urbana, IL. A. V. Sumant, D. Grierson, J. E. Gerbi, J. A. Carlisle, O. Auciello, R. W. Carpick, "Surface Studies on Ultrananocrystalline Diamond: Relevance for High-Performance MEMS"

- 2003 ACS GLRM Meeting**, May 31-June 2, Chicago, IL. J. E. Gerbi, O. Auciello, James Birrell, J. A. Carlisle, D. M. Gruen, X. Xiao “Ultrananocrystalline Diamond: Role in Nanotechnology”
- 2003 MRS Spring Meeting**, Apr. 21-15, San Francisco, CA. “Mechanical and Tribological Properties of Ultrananocrystalline Diamond Films Relevant to MEMS”, O. Auciello, B. Peng, B. Prorok, H. D. Espinosa, X. Xiao, J. E. Gerbi, J. Birrell, J. A. Carlisle, M. T. Dugger
- 2002 AVS Fall Meeting**, Nov. 3-8, Boston, MA. J.E. Gerbi, B.W. Alphenaar, O. Auciello, J. Birrell, J.A. Carlisle, D.M. Gruen “N-type Diamond Electronics With Nitrogen Doped Ultrananocrystalline Diamond”
- 2002 AVS Fall Meeting**, Nov. 3-8, Boston, MA. J. Birrell, O. Auciello, J.A. Carlisle, J.E. Gerbi, J.M. Gibson, D.M. Gruen, “Electronic Structure of Nitrogen Doped Ultrananocrystalline Diamond”
- 2002 MRS Fall Meeting**, Dec. 2-6, Boston, MA. J. E. Gerbi, B. W. Alphenaar, O. Auciello, J. Birrell, J. A. Carlisle, D. M. Gruen, X. Xiao, “N-Type Ultrananocrystalline Diamond as a Novel Electronic Material”,
- 2002 MRS Fall Meeting**, Dec. 2-6, Boston, MA. “Low Temperature Deposition of Ultrananocrystalline Diamond Films”, X. Xiao, J. Birrell, S. Trasobares, J. W. Elam, J. E. Gerbi, O. Auciello, D. M. Gruen, J. A. Carlisle
- 2002 MRS Fall Meeting**, Dec. 2-6, Boston, MA. “Electronic Structure of Grain Boundaries in Nitrogen-Doped Ultrananocrystalline Diamond”, J. Birrell, O. Auciello, J. E. Gerbi, J. M Gibson, J. A. Carlisle
- 2001 AVS Fall Meeting**, Oct 28-Nov 2, San Francisco, CA. J. Birrell, O. Auciello, S. Bhattacharyya, J. A. Carlisle, L.A. Curtiss, J.E. Gerbi, J.M. Gibson, D.M. Gruen, J.A. Schlueter, P. Zapol “Effect of Nitrogen Incorporation on the Electronic Properties and Morphology of Ultrananocrystalline Diamond Thin Films”
- 2001 MRS Spring Meeting**, Apr 16-20, San Francisco, CA. J. E. Gerbi, P. M. Voyles, M. M. J. Treacy, J. M. Gibson, W. Chen, B. J. Heuser, and J. R. Abelson, “Control of Medium Range Order in Amorphous Silicon via Energetic Particle Bombardment During Growth”
- 2001 MRS Spring Meeting**, Apr 16-20, San Francisco, CA. J. E. Gerbi and J. R. Abelson, “High Flux, Low-Energy Ion Bombardment Enhanced Crystallinity of Polycrystalline Si Thin Films”
- 2000 MRS Spring Meeting**, Apr. 24-28, San Francisco, CA. J.E. Gerbi, J.R. Abelson, “Microstructural Control of Thin Film Si Using Low Energy, High Flux Ions in Reactive Magnetron Sputter Deposition”
- 2000 AVS Fall Meeting**, Oct. 2-6, Boston, MA. J. E. Gerbi, J. R. Abelson, P. M. Voyles, M. M. J. Treacy, J. M. Gibson, “Medium Range Order in Amorphous Silicon Films as a Function of Low-Energy Particle Bombardment During Growth”
- 1999 AVS Fall Meeting**, Oct. 25-29, Seattle, WA. J. E. Gerbi, J. R. Abelson, “Microstructural Control of Thin Si Films Grown by Reactive Magneron Sputtering Utilizing Low Energy Ion Bombardment”
- 1999 ICAMS 18 Meeting**, Aug. 22-27, Snowbird, UT. J. E. Gerbi, J. R. Abelson, “Optimization of Reactive Magnetron Sputtered Microcrystalline Silicon Films with Low Energy Ion Bombardment”
- 1999 MRS Spring Meeting**, Apr. 5-9, San Francisco, CA. J. E. Gerbi, J. R. Abelson “Optimization Of Reactive Magnetron Sputtered Microcrystalline Silicon Films Using Low Energy Ion Bombardment”
- 1998 MRS Fall Meeting**, Nov. 30-Dec 4, Boston, MA. J. E. Gerbi, D. S. Kim, G. B. Amor, J. R. Abelson, “Hydrogenated and Deuterated Si Thin Films Deposited by Low Temperature Reactive Magnetron Sputtering”
- 1998 AVS Fall Meeting**, Nov. 2-6, Baltimore, MD. J. E. Gerbi, D. S. Kim, G. B. Amor, J. R. Abelson, “Si:H and Si:D Thin Films Deposited by Low Temperature Reactive Magnetron Sputtering”
- 1998 MRS Spring Meeting**, Apr. 13-17, San Francisco, CA. J. E. Gerbi, P. M. Voyles, J. M. Gibson, J. R. Abelson, “Enhanced Crystallinity Of μ c-Si Thin Films Using Deuterium In Low Temperature Reactive Magnetron Sputter Deposition”